

DESCRIPTION OF MAP UNITS
ALL AREAS OF THE QUADRANGLE

Qs	Surficial deposits (Quaternary)
Thd	Hornblende dacite (Pliocene)
Tn	Nenana Gravel (Pliocene and Miocene) — Poorly consolidated conglomerate and sandstone
Tcb	Coal-bearing rocks (Miocene to Eocene)
Ts	Sedimentary rocks (Miocene? to Paleocene?) — Mainly poorly consolidated shale, sandstone, siltstone, and conglomerate
Volcanic rocks (Oligocene to Paleocene)	
Tvv	Flows, pyroclastic rocks, and subvolcanic intrusions — Subaerial volcanic rocks and subordinate dikes ranging in composition from basalt to rhyolite
Tvim	Mafic subvolcanic intrusive rocks — Mainly dikes of basalt and subordinate andesite
Tvif	Felsic subvolcanic intrusive rocks — Mainly dikes of rhyolite and dacite
Tgr	Granitic rocks (Oligocene to Paleocene) — Mainly granite and granodiorite
Tgrv	Granitic and volcanic rocks, undivided (Oligocene to Paleocene) — Border zone between granitic rocks and Tertiary volcanic rocks
Tfv	Fluvialite and volcanic rocks (Eocene?) — Mainly conglomerate, sandstone, and siltstone and a few thin flows of basaltic andesite
Cantwell Formation (Paleocene)	
Tcv	Volcanic rocks subunit — Flows of andesite, basalt, rhyolite, and dacite and pyroclastic felsic rocks
Tcs	Sedimentary rocks subunit — Mainly conglomerate, sandstone, and shale and a few thin coal beds, volcanic flows, and tuff units
TKgr	Granitic and hypabyssal intrusive rocks (Paleocene? and Late Cretaceous) — Mainly granodiorite

NORTHERN, EASTERN, AND SOUTH-CENTRAL AREAS OF QUADRANGLE

Kva	Andesitic subvolcanic intrusive rocks (Late Cretaceous) — Hornblende andesite
Kgr	Granitic rocks (Late and (or) Early Cretaceous) — Mainly tonalite, quartz diorite, and granodiorite; generally well foliated
Kgrt	Tourmaline-bearing granite (Late or Early Cretaceous)
Kjf	Flysch sequence (Early Cretaceous and Late Jurassic) — Graywacke turbidite, shale, siltstone, and conglomerate; metamorphosed in southeast part of area
Kjfk	Overthrust flysch-like rocks (Early Cretaceous and Late Jurassic) — Lithology identical to unit Kjf
Kjog	Conglomerate, sandstone, siltstone, shale, and volcanic rocks (Early Cretaceous and Late Jurassic)
Kjum	Ultramafic rocks (Early Cretaceous or Jurassic) — Plagioclase-bearing peridotite
Jgb	Alkali gabbro (Late Jurassic)
Dmg	Metagabbro (Late Devonian?)

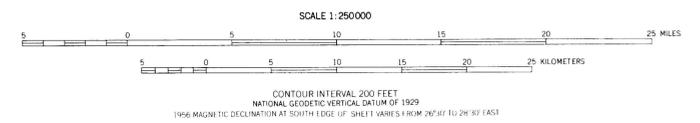
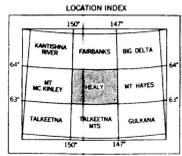
Yukon-Tanana terrane

Kvb	Basaltic subvolcanic rocks (Late Cretaceous) — Mainly dike swarms
Tcs	Calcareous sedimentary rocks (Late Triassic; middle? Norian to late Karnian) — Locally metamorphosed, carbonaceous, calcareous shale and sandstone, and sandy to silty limestone. Includes sills and dikes of gabbro
MDt	Totatanka Schist (Early Mississippian to Middle Devonian) — Carbonaceous slate, phyllite, and schist; metachert, quartz-orthoclase-sericite schist, and augen gneiss; metavolcanic rocks
Talkeetna superterrane (includes Wrangellia terrane)	
TvS	Metavolcanic, metavolcaniclastic, and subordinate metasedimentary rocks (Late Triassic; late Norian) — Marine basalt, tuff, slate, and diabase sills
Tcn	Chertstone and Nizina Limestones, undivided (Late Triassic; early Norian and late Karnian)
Tn	Nikolai Greenstone (Late and (or) Middle Triassic) — Mainly subaerial flows of amygdaloidal basalt
Tpm	Metasedimentary rocks sequence (Middle Triassic to Late Pennsylvanian?) — Black argillite, thin beds of volcanic breccia and sandstone, and limestone overlain by thin-bedded chert. Sills and dikes of gabbro
PPV	Andesitic volcanic rocks (Early Permian? and Pennsylvanian) — Volcanic flows and breccias; probably marine

SOUTHWESTERN AND WEST-CENTRAL AREAS OF QUADRANGLE

Kms	Melange south of McKinley fault (Late and (or) Early Cretaceous) — Dark-gray flysch, cherty tuff, volcanic sandstone, and blocks of limestone (msl)
Kmn	Melange north of McKinley fault (Late and (or) Early Cretaceous) — Similar to unit Kms, but contains recrystallized limestones (mnl) and ophiolitic rocks (mno), mainly serpentinite, basalt, and chert
Kjfl	Flysch sequence (Late Cretaceous to Late Jurassic)
Kjf	Flysch sequence (Early Cretaceous and Late Jurassic)
Kja	Argillite, chert, limestone, and sandstone (Early Cretaceous and Late Jurassic)
Jrla	Crystal tuff, argillite, chert, graywacke, and limestone (Late Jurassic to Late Triassic?)
Jrs	Red and brown sedimentary rocks and basalt (Early Jurassic and Late Triassic) — Red sandstone, siltstone, conglomerate, and basalt overlain by brown sandstone and siltstone
Tcg	Conglomerate and volcanic sandstone (Late Triassic)
Tbd	Basalt, diabase, and subordinate sedimentary rocks (Late Triassic; Karnian and Norian)
Tib	Limestone and basalt sequence (Late Triassic)
Tf	Red beds (Late Triassic) — Red sandstone, siltstone, and conglomerate
Tps	Flysch-like sedimentary rocks (Late Triassic to Pennsylvanian) — Impure sandstone, siltstone, and shale; minor limestone and chert
Tdv	Volcanogenic and sedimentary rocks (Early Triassic to Late Devonian) — Tuffaceous chert, mudstone, and basalt breccia; flysch-like graywacke and mudstone; limestone
Dsb	Serpentinite, basalt, chert, and gabbro (Late Devonian)
Nixon Fork terrane	
Dos	Sedimentary rocks sequence (Middle Devonian to Ordovician) — Black argillite and siltstone, massive limestone (ls), thin-bedded limestone, and chert

MAP C. DISTRIBUTION OF CASSITERITE, POWELLITE, AND SCHEELITE



EXPLANATION FOR MAP C

△	Cassiterite
■	Powellite
●	Scheelite
•	Sample site — None of the above minerals identified; amounts of the above minerals may exceed 20 percent by volume of the nonmagnetic fraction

MINERALOGICAL MAPS SHOWING THE DISTRIBUTION OF ORE-RELATED MINERALS IN THE MINUS-30-MESH, NONMAGNETIC HEAVY-MINERAL FRACTION OF STREAM SEDIMENT, HEALY QUADRANGLE, ALASKA

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—	Contact — Approximately located
— —	Thrust fault — Showing direction of dip of overturned thrust fault. Dashed where inferred, dotted where concealed. Sawtooth on upper plate
— —	High-angle reverse fault — Dashed where inferred, dotted where concealed. Sawtooth on upper plate
— —	Fault — Dashed where inferred; dotted where concealed. Where displacement is known, U, upthrown side, D, downthrown side; arrows indicate relative horizontal movement
---	Postulated position of fault prior to intrusion of plutonic and subvolcanic rocks
↑	Anticline — Showing direction of plunge
↑	Overturned anticline — Showing direction of dip of limbs and plunge
↑	Syncline — Showing direction of plunge. Dashed where inferred
↑	Overturned syncline — Showing direction of dip of limbs and plunge. Dashed where inferred

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